Remarks

Claim Objections Pursuant to 35 USC 112

The Examiner rejected claims 1, 14, 15 and 21 – 25 as not supported by a specification that gave notice of the possession of the invention in that the Examiner contends that: (1) a three dimensional structure is not formed in elastomeric material; (2) the use of sputter deposition to form masking layers for fabrication of the three dimensional structure; (3) directionally etching elastomeric material in combination with sputter deposition to form masking layers for fabrication of the three dimensional structure are not discussed.

1. *"Three dimensional structure formed in elastomeric material."*

The specification states at page 2, lines 11 -12:

> "The invention is defined in one embodiment as an improvement in a method of microfabricating elastomeric material having a characterizing surface tension."

Since we live in a three dimensional world and can in fact only fabricate things in three dimensions, one can reasonably conclude that if some elastomeric material is microfabricated that what is fabricated is a three dimensional object of some sort. Objects of one or two dimensions are in fact mathematical abstractions as are objects with dimensions of four and higher. Numerous other references to performing fabrication operations on the elastomeric material can be found throughout the specification. For example at page 5, lines 2-3 it is stated that:

"According to the invention semiconductor processing procedures can be applied to silicone elastomeric materials. "

"Semiconductor processing procedures" is commonly understood to mean procedures to make semiconductor devices. Such devices are necessarily three dimensional. It is implicit that semiconductor processing procedures used on elastomeric material would also render three dimensional objects or structures as a result.

2. *"The use of sputter deposition to form masking layers for fabrication of the three dimensional structure".*

That a three dimensional structure is formed is established above. At page 2, lines 18 – 20, it is stated:

"In particular the silicon dioxide layer is formed on the elastomeric material by sputter deposing silicon dioxide on the elastomeric material in an argon-oxygen plasma."

It is clear that a SiO_2 layer is sputtered onto the elastomeric material. At page 6, lines 5 – 8, it is stated:

". Conversely, the *deposition of silicon dioxide* in ArO_2 plasmas can be followed by silicon or silicon nitride deposition in Ar/N_2 plasmas, and the desired number and order of layers can be deposited onto the initial oxide layer for further processing, such as *for metalizations or mask deposition.*"

Therefore, it is clear that silicon dioxide can be disposed as part of a number of layers for mask deposition among other uses.

3. *"Directionally etching elastomeric material in combination with sputter deposition to form masking layers for fabrication of the three dimensional structure"*

That elastomeric material is subject to sputter deposition to form masking layers for fabrication of the three dimensional structure is established above. At page 3, lines 10 – 13, it is stated:

> "The invention is also defined as a method of directionally etching an elastomeric material comprising the steps of providing an RF plasma etching system, creating an oxygen plasma in the presence of Freon in the RF plasma etching system, and removing silicon tetrafluoride from the RF plasma etching system. "

Thus, it is clear that directional etching of an elastomeric material is one of the focal points of the invention.

4. *Indefiniteness*

Claims 14, 15 and 21 – 25 were responsively amended to remove the noted points of indefiniteness.

Claim Rejections - 35 *USC* § *102*

Claim 1 was rejected as anticipated by **Ikeda et.al.** U.S. Patent 6,280,642

(2001). Ikeda was cited for teaching at col. 18, lines 8 – 15:

> "After the formation of the chromium pattern, as shown in FIG. 10 (C), a thick resist layer 5 was coated on the whole surface of the transparent substrate 1 in its chromium pattern 2 side. The resist used in this step was an ultraviolet-sensitive, negative-working, thick layer resist (THB-30 (tradename), manufactured by Japan Synthetic Rubber Co., Ltd.). "

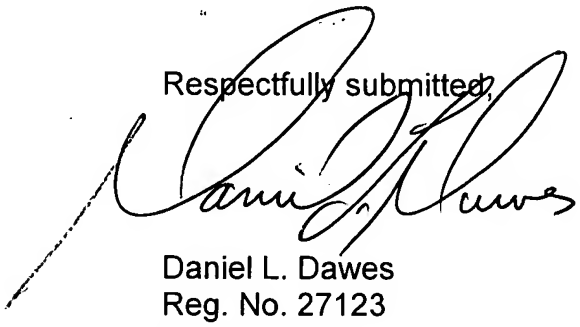
The resist layer 5 is masked by a sputtered patterned Cr layer 2 in Figs. 10A – E. The resist layer 5, however, is not disclosed as an elastomeric layer. The word, "elastomeric" is not used in **Ikeda**. While photoresists are typically made out of polymeric compounds, they are not elastomeric.[1] In fact as disclosed in **Ikeda**, the disclosed resist layer is baked to thermoset the resist. Thermoset polymers are cured rigid materials, which are decidedly not elastomeric. Furthermore, the Cr mask was laid down not onto the resist, but the reverse was the case. The resist layer was laid down onto the prepatterned Cr layer which was first disposed on the substrate 1.

Claim 1 as amended requires photolithographically fabrication of the elastomeric material using semiconductor fabricating procedures, including a plasma sputtering deposition disposed onto the elastomeric material to form masking layers. It cannot be sustained that **Ikeda** discloses each and every claim of amended claim 1.

[1] The fact that the resist, THB-30, was manufactured by Japan Synthetic Rubber Co. does not mean if was in any sense rubber or like rubber.

The applicant respectfully requests advancement of the claims to issuance.

Respectfully submitted,



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